In view of the foregoing amendments and the following remarks, the applicants respectfully submit that the pending claims are not anticipated under 35 U.S.C. § 102. Accordingly, it is believed that this application is in condition for allowance. **If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, <u>the applicant respectfully requests that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits</u>**.

The applicant will now address each of the issues raised in the outstanding Office Action.

Election

The applicants elect the claims of group I, namely, claims 1-33. Non-elected claim 34 has been canceled.

Objections

Claim 17 is objected to because of a minor informality. Claim 17 has been amended to add a period at the end of the claim.

Rejections under 35 U.S.C. § 102

Claims 1-33 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,747,971 ("the

Hughes patent"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Regarding independent claims 1 and 17, the Hughes patent does not teach a method for matching a non-empty virtual output queue (VOQ) of the input module with an outgoing link in the input module, and further matching the outgoing link (of the input module) with an outgoing link of one of the central modules.

The Hughes patent merely teaches a method where a request controller 314 (which the Examiner contends is an arbiter) constructs a switch frame 315a-h (See Figure 3 of the Hughes patent.), where each switch frame contains service requests for selected cells queued in the ingress port 304a (input module). Frames 315a-h are sent to the switch planes 309a-h (central modules). (See col.6, lines 64-67; col.7, lines 1-4, and Figure 3 of the Hughes patent.) Thus, the Examiner contends that, essentially, the Hughes patent is matching a non-empty VOQ 312a-312n and 313 **with a switch plane** 309a-h (central module), apparently by assigning cells to a particular row of a switch frame. However, since each row of a switch frame can include requests and/or cells from more than VOQ, **it does not match the outgoing link (of the input-module) with an outgoing link of one of the central modules**.

New claim 35, which depends from claim 1, highlights this difference by further reciting that "each of the outgoing links of the input module is associated with an arbiter that is dedicated to the particular outgoing link."

Further, claim 17 includes "means plus function" elements which must be interpreted in light of the

specification. The Examiner impermissibly ignored this structure. As the Court of Appeals for the Federal Circuit has instructed:

> The plain and unambiguous meaning of paragraph six is that one construing means-plus-function language in a claim must look to the specification and interpret that language in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the specification provides such disclosure. Paragraph six does not state or even suggest that the PTO is exempt from this mandate, and there is no legislative history indicating that Congress intended that the PTO should be. 3 Thus, this court must accept the plain and precise language of paragraph six. See <u>Mansell</u> supra; see also <u>Diamond v. Chakrabarty</u>, 447 U.S. 303, 308 [206 USPQ 193] (1980) ("courts 'should not read into the patent laws limitations and conditions which the legislature has not expressed' "), quoting <u>United States v. Dubilier Condenser Corp.</u>, 289 U.S. 178, 199 [17 USPQ 154] (1933). Accordingly, ***because no distinction is made in paragraph six between prosecution in the PTO and enforcement in the courts, or between validity and infringement, we hold that paragraph six applies regardless of the context in which the interpretation of means-plus-function language arises, i.e., whether as part of a patentability determination in the PTO or as part of a validity or infringement determination in a court.*** To the extent that <u>In re Lundberg</u>, 244 F.2d 543, 113 USPQ 530 (CCPA 1979), <u>In re Arbeit</u>, 206 F.2d

947, 99 USPQ 123 (CCPA 1953), or any
other precedent of this court
suggests or holds to the contrary, it
is expressly overruled. [Emphasis
added.]

In re Donaldson Co. Inc., 29 U.S.P.Q.2d 1845, 1848 (Fed
Cir 1994).

According to one embodiment consistent with the
present invention and described in the specification,
during the first phase of dispatching queued cells stored
in the VOQs, a method is taught for matching a non-empty
VOQ 125 with an outgoing link 130 in the input module
120. (See page 14, lines 15-18; also see page 26, lines
10-26; and Figure 8 of the present application.) If the
dispatching at a first phase of queued cells at the input
module of the Hughes patent is examined, one can find
substantial differences compared to the dispatching at a
first phase of queued cells at the input module of the
present invention.

Specifically, the Hughes patent uses a method
wherein a request controller 314 (arbiter) is responsible
for selecting queued cells from the VOQs and issuing
service requests. The request controller 314 constructs
a switch frame 315a-h that is sent to each switch plane
309a-h. Each switch frame 315 contains a number of
service requests for selected cells in the input module.
(See col.6, lines 64-67, and Figure 3 of the Hughes
patent.) The Hughes patent uses the request controller
314 to map the service requests into the switch frames.
According to Figure 3 of the Hughes patent, there are 14
ingress/egress ports 304a-n/306a-n, 14 unicast queues
312a-n, one multicast queue 313, and 8 switch frames

315a-h. Each switch frame 315 may map up to 14 service
requests for queued cells to their proper ingress port
306. (See Figures 3 and 5; and col.9, lines 19-63 of the
Hughes patent.) The switch frames 315 have a request
type 506 indicating whether it is a multicast or unicast
frame and use a two-bit field to represent the four
different service request states (primary request (10),
secondary request (01), no cell requesting service (00)
and primary request with speedup (11)). (See col.9,
lines 64-67; col.10, lines 1-23; col.11, lines 65-67; and
Figure 5 of the Hughes patent.) Generally, cells at the
head of the line in a queue are deemed as priority and
are mapped by the request controller 314 to an initial
switch frame. Thus, the initial switch frame comprises a
primary service request. The remaining cells in the queue
(if any) are non-priority cells (secondary requests) and
are mapped sequentially in a round robin fashion across
the following switch frames, one secondary request per
switch frame. (See col.10, lines 32-67; col.11, lines
1-14; and Figure 5 of the Hughes patent).

On the other hand, an input module 120' of the
present invention has VOQs 810a-b which include VOQ
arbiters 815a-d for broadcasting service requests to all
link controllers 820a-b which include link arbiters
825a-b. Once the link arbiters receive the VOQ requests,
they may reply with grants back to the selected VOQ
arbiters. Next, the VOQ arbiters receiving a grant may
reply with a grant back to a selected link controller. At
this point, a VOQ 810, winning arbitration, may be
matched with an outgoing link.

From the aforementioned, it is apparent that the two
inventions substantially differ in the method and

structure used in the input module for cells requesting
service and the process entailed in fulfilling this
service. Thus, the structure in the Hughes patent
differs substantially from the various "means for
matching" described in the specification.

Similarly, independent claim 11 and dependent claims
2, 8, 18 and 23 recite details of VOQ-to-input module
output link matching, or details of input module output
link-to-central module output link matching. As just
described, these details of how matching is performed are
not taught by the Hughes patent.

Further, the Hughes patent does not teach that high
throughput can be achieved without speedup at the central
modules. Although the Hughes patent discusses speedup,
it is apparently using speedup in a different context.
(The Hughes patent teaches a method wherein a speedup
mode is available. Speedup accelerates service for a
specific queue. The acceleration is achieved by ensuring
that every cell within the queue is mapped as a primary
service request (highest priority). Thus speedup applies
to a queue rather than a cell wherein all cells in the
queue are given the highest priority. (See col.23, lines
41-52.))

Regarding independent claims 11 and 27, the Hughes
patent does not teach a method for broadcasting a request
for the non-empty VOQ to an arbiter for each of the
outgoing links of the input module. The Hughes patent
merely teaches a method where a multicast cell may be
queued in a multicast queue in the ingress port (input
module) and one of the frames may be sent to each of the
switch planes per cycle where one frame exists per queued
multicast cell. (See col.3, lines 66-67; and col.4,

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lines 1-2.) Furthermore, the Hughes patent teaches a
method where a request controller 314 (purportedly an
arbiter) simply selects from the VOQs which cells are to
request service and then implements the service request
process for the selected cells. (See col.6, lines 41-
44.)

On the other hand, according to some embodiments
consistent with the present invention, a method is taught
for non-empty VOQs to broadcast requests to an arbiter
for each of the outgoing links in the input module.
Specifically, each VOQ has an arbiter which broadcasts a
request to each of the link arbiters in the input module.
A series of requests and grants takes place within the
input module until a non-empty VOQ winning arbitration
may be matched with an outgoing link. (See, e.g., page
26, lines 10-26 and Figure 8 of the present application.)
Again, as mentioned earlier, the portions of the Hughes
patent cited by the Examiner all pertain to the matching
and interaction taking place between the queued cells in
the input module and the central module, **not** between the
queued cells and outgoing links within the input module
as claimed.

From the foregoing, it is also apparent that the two
inventions differ in structure. Specifically, an
embodiment consistent with the present invention has
arbiters in every VOQ and link arbiters for every
outgoing link within each input port for establishing a
match between a non-empty VOQ and an outgoing link (See,
e.g., Figure 8.), whereas the Hughes patent only has a
single arbiter in each input module for selecting
non-empty VOQs and processing requests between the input

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module and central module. Hence the two inventions are
fundamentally different.

In view of the foregoing, independent claims 1, 11,
17 and 27 are not anticipated by the Hughes patent.
Since claims 2-10 and 35 depend, either directly or
indirectly, from claim 1, since claims 12-16 depend,
either directly or indirectly, from claim 11, since
claims 18-26 depend, either directly or indirectly, from
claim 17, and since claims 28-33 depend, either directly
or indirectly, from claim 27, these claims are similarly
not anticipated by the Hughes patent.

Rejections under 35 U.S.C. § 103

Claims 6, 15, 21 and 30 stand rejected under 35
U.S.C. § 103(a) as being unpatentable over the Hughes
patent. The applicants respectfully request that the
Examiner reconsider and withdraw this ground of rejection
in view of the following.

The Examiner concedes that the Hughes patent does
not teach a pointer moving through groups of virtual
output queues before moving through virtual output queues
in each group. (See Paper No. 11102004, page 7.) The
applicants note that this admission precludes the
application of the Hughes patents as a section 102
reference against claims 6, 15, 21 and 30. Accordingly,
the Examiner's rejection of these claims under 35 U.S.C.
§ 102 above, is improper.

To compensate for this admitted deficiency of the
Hughes patent, the Examiner concludes that it would have
been obvious to one skilled in the art that if a pointer
is capable of moving through groups of output queues, it
is thus capable of moving through each of the groups

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before moving through the entire group. The applicants respectfully note that the fact that a reference <u>can be</u> modified to do something is insufficient to show that one skilled in the art <u>would have been motivated to modify the reference</u> to do it. Accordingly, the Examiner has not made a prima facie showing of obviousness.
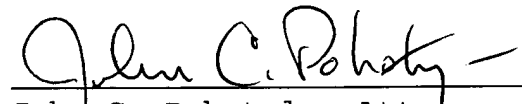
New claims

New claim 35 depends from claim 1 and further distinguishes the invention over the Hughes patent as discussed above.

Conclusion

In view of the foregoing amendments and remarks, the applicants respectfully submit that the pending claims are in condition for allowance. Accordingly, the applicants request that the Examiner pass this application to issue.

Respectfully submitted,

February 22, 2005

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CERTIFICATE OF MAILING under 37 C.F.R. 1.8(a)

I hereby certify that this correspondence is being deposited on **February 22, 2005** with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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